

*I claim:*

Sub 1. A fastener arrangement for attaching one or more flat rectangular solar panels onto a rack  
 2 17 formed of one or more channel members, the channel member having an elongated slot with a  
 3 pair of inwardly facing flanges defining said slot; said fastener comprising a clip member having  
 4 a generally T-shaped profile with a stem portion with opposed flat sides and a cap portion at an  
 5 upper end of the stem member with flanges extending above said opposed flat sides; a threaded  
 6 fastener member rotatable in said stem portion and extending downward therefrom; and a  
 7 channel nut adapted to engage the flanges of said channel member, the channel nut having  
 8 female threads to receive said threaded fastener therein.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 2. The fastener arrangement according to Claim 1 wherein said clip member is injection molded  
 2 of a sturdy plastic material.

1 3. The fastener arrangement according to Claim 1 wherein stem portion has a width sufficient to  
 2 span across said channel member, and has a lower surface with contoured ends that continue  
 3 over edges of said channel member.

1 4. The fastener arrangement according to Claim 1 further comprising a pair of struts joining said  
 2 clip member with said channel nut.

1 5. The fastener arrangement according to Claim 4 wherein said struts are resilient and  
 2 deformable to bend when the threaded fastener member is tightened down on said channel nut.

1 6. The fastener arrangement according to Claim 4 wherein said struts are frangible member that  
 2 break when the threaded fastener member is tightened down on said channel nut.

1 7. The fastener arrangement according to Claim 4 wherein said clip member, said channel nut,  
 2 and said struts are unitarily molded.

1 8. The fastener arrangement according to Claim 1 wherein said threaded fastener includes a pair  
 2 of bolts arranged in a pair of holes in said clip member and which are received in respective  
 3 threaded sockets in said channel nut.

1 9. A solar collector arrangement comprising one or more parallel rows of solar panels, each said  
 2 row including:

3 a rack which comprises at least one elongated channel member, each said channel  
 4 member having an elongated slot with a pair of inwardly facing flanges defining said slot;

5 a plurality of flat generally rectangular solar panels; and

6 a plurality of fastener arrangements holding said solar panels side by side onto said rack,  
 7 each said fastener arrangement including a clip member having a generally T-shaped profile with  
 8 a stem portion with opposed flat sides and a cap portion at an upper end of the stem member with  
 9 flanges extending above said opposed flat sides for engaging respective edges of said solar  
 10 panels; a threaded fastener member rotatable in said stem portion and extending downward  
 11 therefrom; and a channel nut adapted to engage the flanges of said channel member, the channel  
 12 nut having female threads to receive said threaded fastener therein .

1 10. A solar collector arrangement according to Claim 9 further comprising strips of glazing  
 2 material positioned between said solar panels and respective ones of said at least one channel  
 3 member to provide cushioning and electrical isolation between said solar panels and said channel  
 4 members.

1 11. A solar collector arrangement according to Claim 9 further comprising at least one extruded  
 2 resilient filler gasket disposed between adjacent ones of said solar panels at one or both sides of  
 3 each of said fastener arrangements.

1 12. A solar energy collection arrangement according to Claim 11 wherein gasket is made of a

2 rubberlike material.

1 13. A solar energy collection arrangement according to Claim 11 wherein said gasket has a pair  
2 of spaced flanges along each of two opposed edges, each pair defining a receptacle for fitting  
3 over an edge of a solar panel.

1 14. A solar collector arrangement comprising at least one support beam, an array of rectangular  
2 solar panels attached along said support beam, and a plurality of clamps for clamping said  
3 rectangular solar panels onto said support beam, each said clamp including an upper clamp  
4 portion having a generally T-shaped profile with a central stem and a pair of transverse flanges at  
5 upper edges of said central stem; a lower clamp member shaped to clamp against a portion of  
6 said support beam to hold the upper clamp member down against said support beam, and adapted  
7 to receive at least one threaded fastener member passing through said upper clamp member.

1 15. Solar collector arrangement according to Claim 14, wherein said lower clamp portion has a  
2 pair of bolt receiving portions and an arched portion between said bolt receiving portions.

1 16. Solar collector arrangement according to Claim 14, further comprising at least one strip of a  
2 glazing material situated on said support beam for cushioning said solar panels.

1 17. A method of installing flat solar panels onto a support formed of one or more elongated  
2 support beams, comprising, applying glazing material onto one or the other of the solar panels  
3 and support beams; positioning the panels in place on the support beams so that the panels are  
4 held by the tape onto the beams; attaching to the support beams, in spaces between adjacent ones  
5 of said panels, fastener clips, each said fastener clip including a clip member having a generally  
6 T-shaped profile with a stem portion with opposed flat sides and a cap portion at an upper end of  
7 the stem member with flanges extending above said opposed flat sides, a threaded fastener  
8 member rotatable in said stem portion and extending downward therefrom, and a retainer

9 member adapted to engage a portion of the associated support beam, the retainer member having  
10 threads to receive said threaded fastener therein; and rotating said threaded fastener member to  
11 clamp said clip member to edges of said adjacent panels on said support beam.

1 18. A method of installing flat solar panels onto a support according to Claim 17, further  
2 comprising running electrical wires carrying power from said panels through a wireway formed  
3 in said support beams.

1 19. A method of installing flat solar panels onto a support according to Claim 17, wherein said  
2 support beam includes a channel member having one slotted side with a pair of inwardly directed  
3 flanges defining a slot therebetween; and said step of attaching said fastener clips includes for  
4 each such clip inserting the retainer member thereof through the slot, and by rotating said  
5 threaded fastener member drawing said retainer member against said inwardly directed flanges.